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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,935	07/21/2003	Yoshihiro Okada	55779 DIV(70820)	6374
21874	7590	12/17/2004	EXAMINER	
EDWARDS & ANGELL, LLP			TON, MINH TOAN T	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	
			2871	

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/624,935

Applicant(s)

OKADA ET AL.

Examiner

Toan Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) ~~2-5~~ and 12-17 is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 7-11 is/are rejected.
- 7) ☐ Claim(s) 3,5-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi (US 6781658).

Choi discloses an active matrix type liquid crystal display apparatus comprising (see at least Figures 3-4 and their descriptions): an insulation substrate (1); scanning lines (54, 56) formed on the insulation substrate; signal lines (50, 52) extending in a direction intersecting a direction in which the scanning lines extend; switching devices provided in the vicinity of each intersection of the scanning and signal lines such that the switching devices are arrayed in a matrix form; an interlaminar insulation film (74) disposed on or above the scanning lines, the signal lines, and the switching devices; and pixel electrodes (64) formed on the interlaminar insulation film and arranged in a matrix form, each electrode being connected to an output terminal (drain) of an associated switching device, wherein only a part of each of opposite side portions of one pixel electrode widthwise covers two signal lines extending adjacent to the pixel electrode.

Choi discloses (see at least Figures 3-4) the pixel electrode covering the switching device.

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Choi discloses (see at least Figures 3-4) parts of the pixel electrode covering the two signal lines adjacent to the pixel electrode are parts that overhang from side edges of the pixel electrode.

Choi discloses (see at least Figures 3-4) the switching device disposed in the vicinity of a gap between two adjacent pixel electrodes.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi as applied to claims 1-2, 4 and 7 above.

The use of a black matrix formed (on either substrate) between adjacent pixel electrodes (i.e., in non-displaying regions, not in the center line of the pixel electrode) is common and known in the art for advantages such as shielding light in non-displaying regions → high contrast. Therefore, it would have been obvious to one of ordinary skill in the art to employ a black matrix formed between two adjacent pixel electrodes in such a manner that the black matrix overlaps each one of these pixel electrodes by at least an amount corresponding to an alignment margin of the opposed board relative to the insulation board for advantages such as shielding light in non-displaying regions → high contrast.

***Allowable Subject Matter***

5. Claims 3 and 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12-17 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not anticipate nor render obvious to one ordinary skilled in the art an active matrix liquid crystal display device comprising a combination of various elements as claimed, more specifically, each signal line is bent twice between two adjacent scanning lines such that two (bent signal lines) generally parallel but longitudinally displaced parts are formed, and these two parts are covered by opposed side portions of two adjacent pixel electrodes, respectively (claim 3); both side edges of each pixel electrode are bent twice such that the overhanging parts are diagonally formed on the respective sides of the pixel electrode and these overhanging parts cover the two signal lines adjacent to the pixel electrode, and the auxiliary capacitor line underlines a portion between the two bents of each side edge of the pixel electrode (claims 12-17).

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 10, 2004

TOANTON  
PRIMARY EXAMINER